Section 5.1 Controls

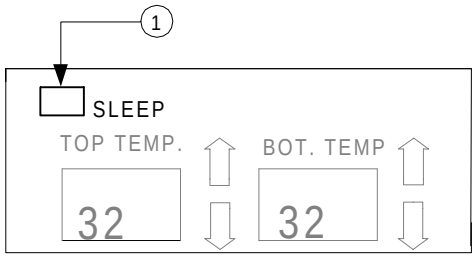
The operator control panel for the Falcon 160 Laminator is located on the front of the machine, to the right of the front operating position.

For an illustration of the complete front control panel, please refer to **Figure 5.1.1.** The names and functions of these controls are as follows:

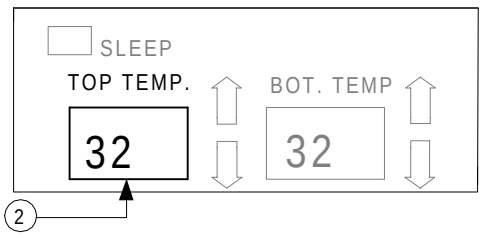
INFORMATION

When any command is pressed on the control panel, a "beep" will sound. If the command is held down, the panel will "beep" only once.

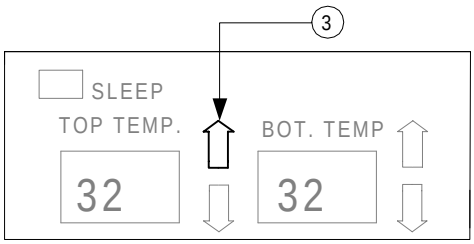
(1) SLEEP : If flashing, the machine is in sleep mode. This will occur after 3 hours of no activity. To wake the laminator from sleep mode, press any command.



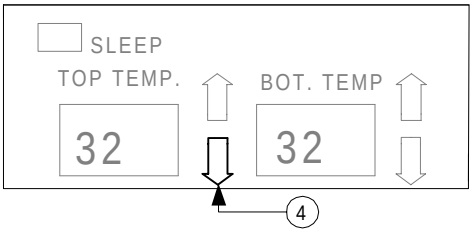
(2) TOP TEMP DISPLAY : The display will show the set point temperature of the top main roller as the default display. When the top roller temperature has reached in the +/- 10°F range of the set point, the display will be solid. When outside of this range, the display will flash.



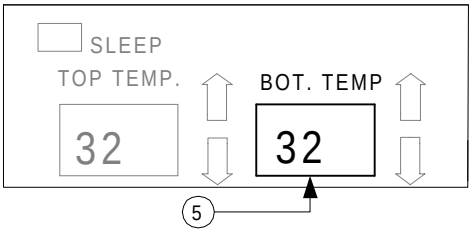
(3) TOP TEMP ▲ : When pressed, will increase the set point value of the top main roller in increments of 2 degrees. If held down, it will only increase to the maximum temperature setting of 290°F (143°C).



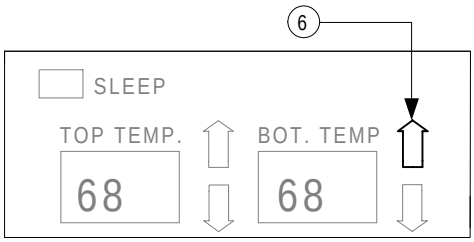
(4) TOP TEMP ▼ : When pressed, will decrease the set point value of the top main roller in increments of 2 degrees. If held down, it will only decrease to the minimum temperature setting of 68°F (20°C).



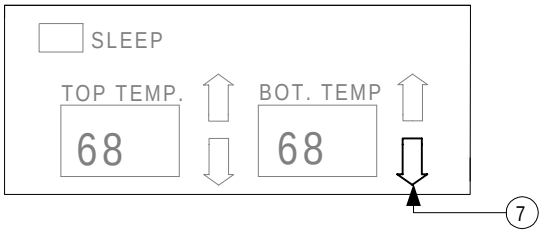
(5) BOT. TEMP. DISPLAY : The display will show the set point temperature of the bottom main roller as the default display. When the bottom roller temperature has reached in the +/- 10°F range of the set point, the display will be solid. When outside of this range, the display will flash.



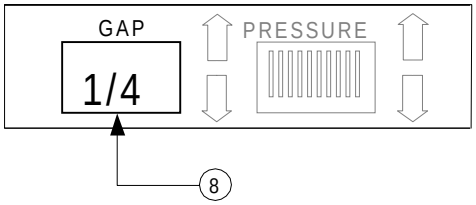
(6) BOT. TEMP. ▲ : When pressed, will increase the set point value of the bottom main roller in increments of 2 degrees. If this key is held down, it will only increase to the maximum temperature setting of 290°F (143°C).



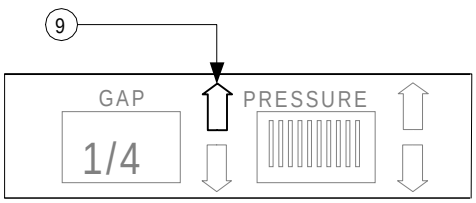
(7) BOT. TEMP. ▼ : When pressed, will decrease the set point value of the bottom main roller in increments of 2 degrees. If held down, it will decrease to the minimum temperature setting of 68°F (20°C).



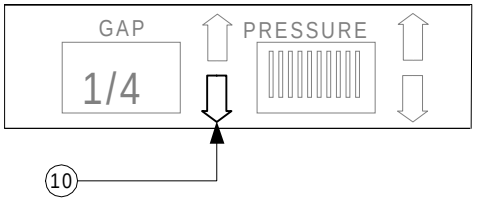
(8) GAP DISPLAY : Displays the current main roller nip opening. The nip has a range of 0 to 1" gap.



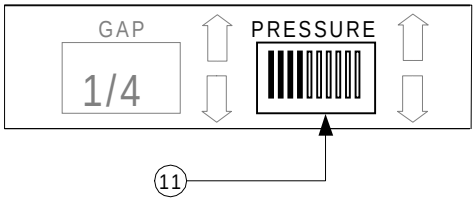
(9) GAP ▲ : When pressed, will increase the gap by 1/16 in. increments. If held down, it will automatically increase the gap by 1/16 in. increments until it has reached a maximum opening of 1 in. on the **GAP DISPLAY**.



(10) GAP ▼ : When pressed, will decrease the gap by 1/16 in. increments. If held down, it will automatically decrease the gap by 1/16 in. increments until it has reached a minimum opening of 0 in. on the **GAP DISPLAY**.



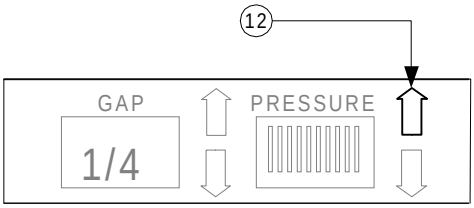
(11) PRESSURE DISPLAY : Displays the amount of pressure being used. Each bar represents 10% of the maximum allowable pressure. All ten bars illuminated equals 100% of the maximum allowable pressure.



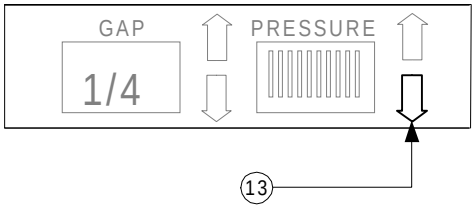
INFORMATION

When adjusting the pressure, the gap will be affected as well.

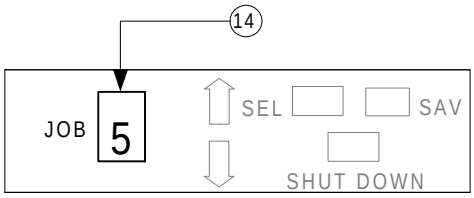
(12) PRESSURE ▲ : When pressed once, will decrease the pressure by 5%. If held down, it will decrease from 100% of the maximum allowed pressure to 0% at which point no bars will be illuminated.



(13) PRESSURE ▼ : When pressed once, will increase the pressure by 5%. If held down, it will increase from 0% of the minimum allowed pressure to 100% at which point all bars will be illuminated.



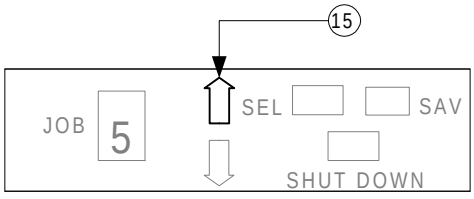
(14) JOB DISPLAY : Displays the job number selected and will set the operating parameters saved for that number once **SEL** has been pressed.



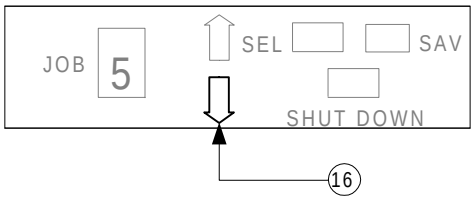
INFORMATION

Job programming is explained in Section 5.4

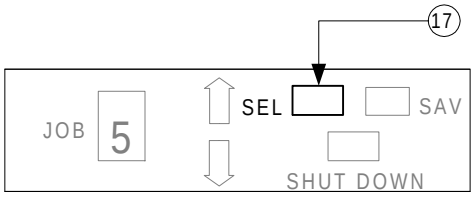
(15) JOB ▲ : When pressed once will increase the job number in **JOB DISPLAY** by increments of 1. If pressed and held, the **JOB DISPLAY** will increase to 9 at which point it will stop.



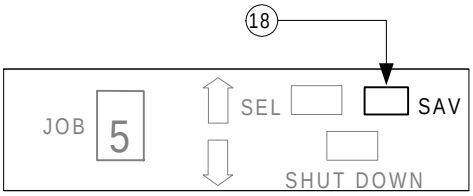
(16) JOB ▼ : When pressed once will decrease the job number in **JOB DISPLAY** by increments of 1. If pressed and held, the **JOB DISPLAY** will decrease to 0 at which point it will stop.



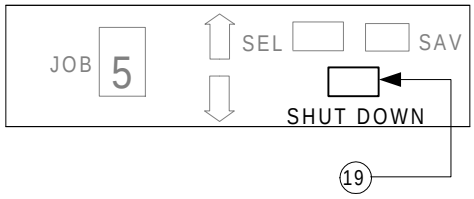
(17)SEL : When pressed will send the operating parameters for the stored job number selected to the correct devices. Any time **JOB ▲** or **JOB ▼** is pressed, **SEL** will flash indicating a change in job number.



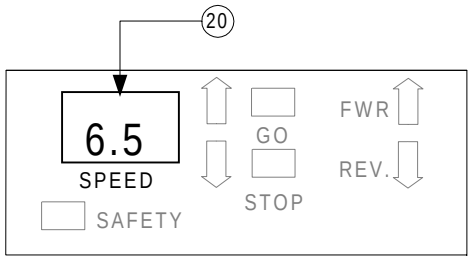
(18) SAVE : When pressed, will save the current settings for the number showing in the **JOB DISPLAY**. For more information, refer to **Section 5.4 Job Programming** on how to save parameters.



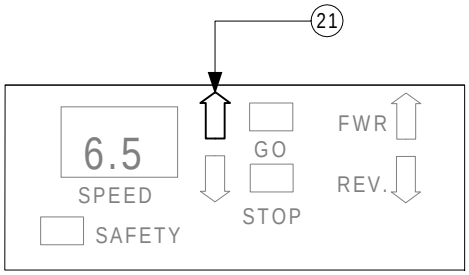
(19) SHUTDOWN : When pressed, automatically raises the main roller gap setting to 1 in., turns the top and bottom temperature controller units off and stops the drive motor. The LCD on the control panel remains illuminated and the **SLEEP** indicator will be solid.



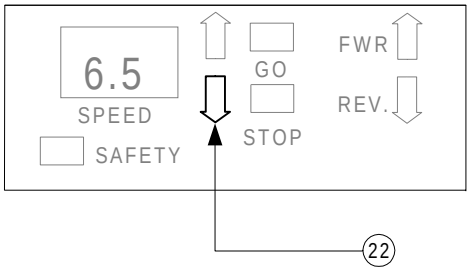
(20) SPEED DISPLAY : Displays the current speed setting of the laminator.



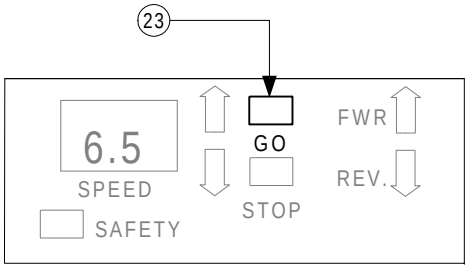
(21) SPEED ▲ : When pressed, increases the speed of the laminator in increments of 0.5 ft/min. When pressed and held, the speed will automatically increase by 0.5 ft/min increments until it has reached the maximum allowed speed of 15 ft/min.



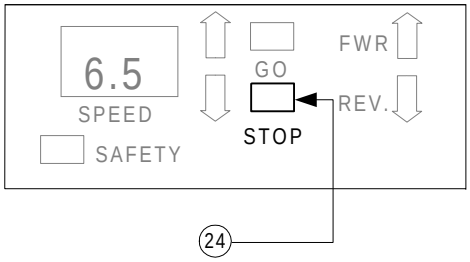
(22) SPEED ▼ : When pressed, decreases the speed of the laminator in increments of 0.5 ft/min. When pressed and held, the speed will automatically decrease by 0.5 ft/min increments until it has reached 0 ft/min.



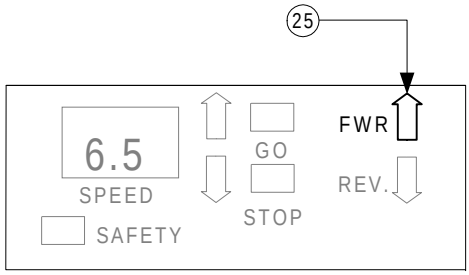
(23) GO : When pressed, starts the rollers in motion and **GO** becomes solid. This solid indication is referred to as the “panel mode”. If a safety shield is raised during “panel mode”, **GO** and **SAFETY** (refer to **(27) SAFETY** for explanation) begin flashing enabling “footswitch” mode. (refer to **(28) FOOTSWITCH** for explanation)



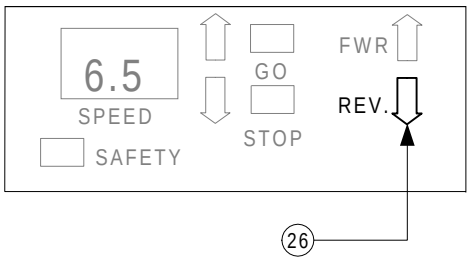
(24) STOP : When pressed, stops the rollers and **GO** becomes white, the **FORWARD ▲** or **REVERSE ▼** will change to the default (white) background color.



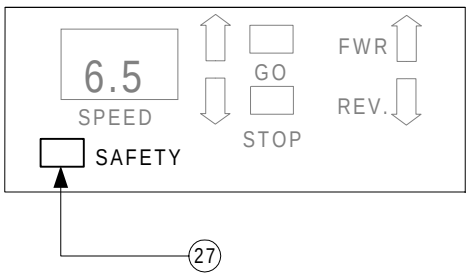
(25) FORWARD ▲ : When pressed, signals the laminator to run in a forward motion and **FORWARD ▲** becomes solid.



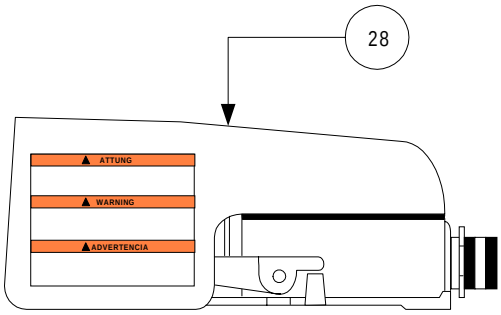
(26) REVERSE ▼ : When pressed, signals the laminator to run in a reverse motion and **REVERSE ▼** becomes solid.



(27) SAFETY : Begins flashing anytime the front or the rear safety shield is in the raised position. This is an indication for the operator to be very careful when operating the laminator in the "Footswitch" mode.



(28) Variable Speed Footswitch : The variable speed footswitch, operates the laminator in "Footswitch" mode. Within this mode, if the safety shield is up, speed is determined by the variable speed footswitch. If the safety shield is down, the speed is controlled through the control panel.



1. To switch from "Panel" mode (**GO** is solid) to "Footswitch" mode (**GO** is flashing) with the safety shields in the down position. Perform the following steps;

- Press on the variable speed footswitch. **GO** begins flashing identifying "Footswitch" mode.
- Once the variable speed footswitch is released, the rollers will stop.
- To make the rollers turn, simply press on the variable speed footswitch.

INFORMATION

When the safety shield is in the lowered position and "Footswitch" mode is engaged, speed is controlled through the control panel

2. To switch from "Footswitch" mode (**GO** is flashing) to "Panel" mode (**GO** is solid) with the safety shields in the down position. Perform the following steps;

- Press and hold the variable speed footswitch down.

- Press and hold **GO** for 3 -4 seconds before releasing the variable speed footswitch.
- Release the variable speed footswitch.
- Release **GO**. **GO** should be solid.

3. In the event that the safety shield must be raised while the laminator is running, Perform the following steps;

INFORMATION

If the variable speed footswitch is not close to the speed of the control panel, output quality may be affected by the speed difference.

A) To raise the safety shield

INFORMATION

Please keep in mind that when the safety shield is raised, speed is controlled through the variable speed footswitch.

- Press and hold on the variable speed footswitch. (approximately 1/2 the travel distance of the variable speed footswitch)

INFORMATION

When a safety shield is raised while pressing on the variable speed footswitch, the speed may be faster or slower than the indicated panel speed.

- Raise the safety shield.

INFORMATION

When the safety shield is raised, the laminator will only run while the variable speed footswitch is depressed.

- Adjust for desired speed using the variable speed footswitch.

INFORMATION

Footswitch speed is not indicated in the SPEED DISPLAY on the control panel.

B) To lower the safety shield

- Lower the safety shield.

INFORMATION

When the safety shield is lowered, speed reverts to the panel speed setting.

- Press and hold **GO** for 3 -4 seconds before releasing the variable speed footswitch.
- Release the variable speed footswitch.
- Release **GO**. **GO** should be solid.

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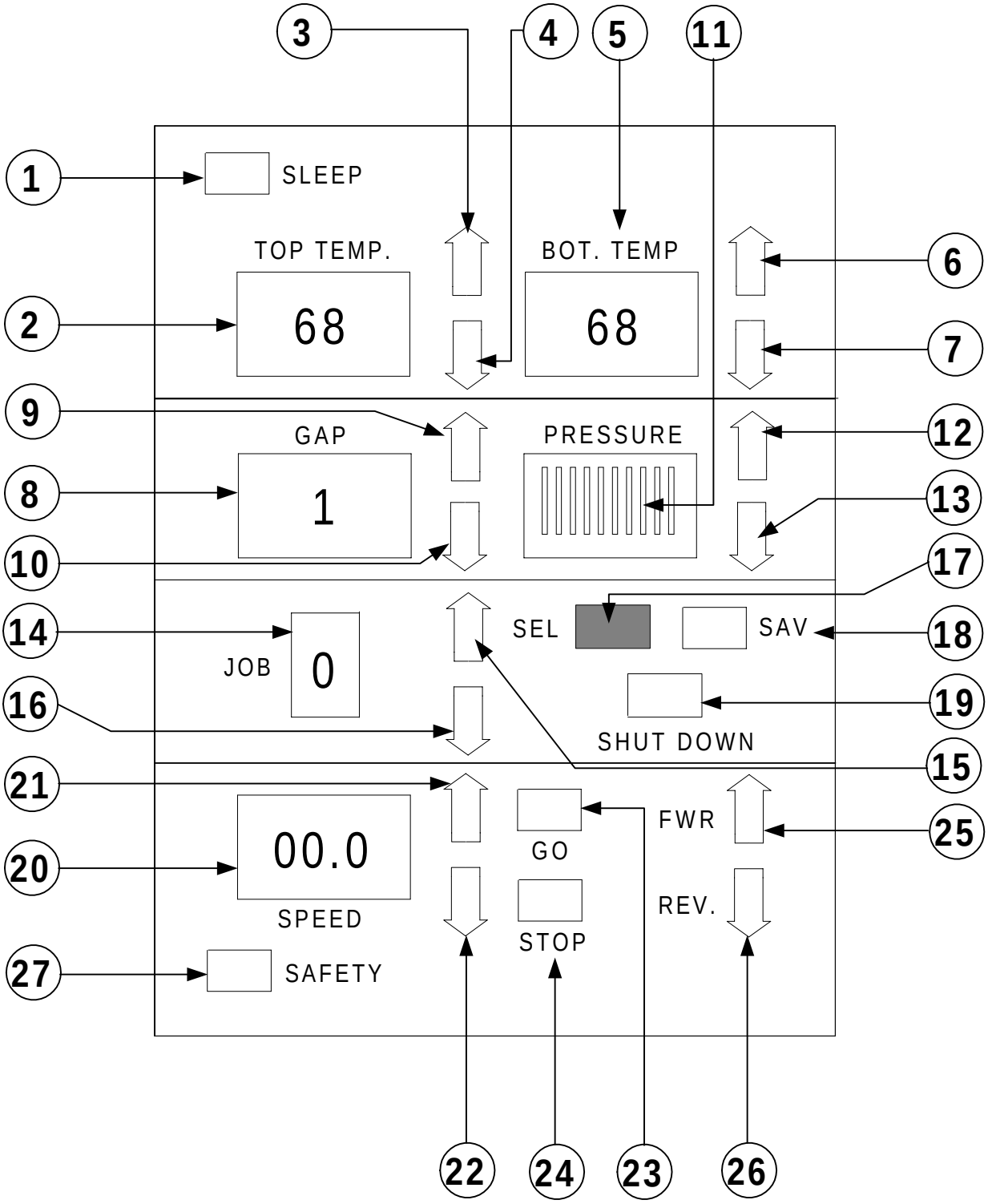
Figure 5.1.1 Front control panel



Section 5.2 Emergency

The F-160 laminator has been designed with safety as a primary consideration; however, you must become thoroughly familiar with the controls, proper operation, proper service procedures, and safety features of the laminator before using or servicing the unit.

GBC Pro - Tech laminators are powerful machines that are designed to mount, laminate, and encapsulate. The forces required to accomplish these tasks can vary from negligible to very large.

The motorized main roll lift mechanism used to provide downward pressure on the top roll is capable of producing forces greater than 400 pounds. This force is applied to any object presented in the opening (called the nip) between the two rolls.

Use care in lowering the top laminating roll and know how to react quickly in an emergency. The main laminator roll up down keys are located on the right side of the machine within the front control panel. These keys control the up / down (gap) motion of the top main laminating roller. Before pressing the down arrow key , ensure that nothing is in the nip area.

In addition, the main laminating rolls of the F-160 can reach temperatures over 200°F (93°C).

DANGER

At these temperatures there is a danger of severe burn if the rolls are touched during setup, operation or servicing.

Reacting to an emergency situation

a) In the event of an emergency, press one of the two **E-STOP** located on the top of the drive side and control side cabinets. The control panel display will go blank.

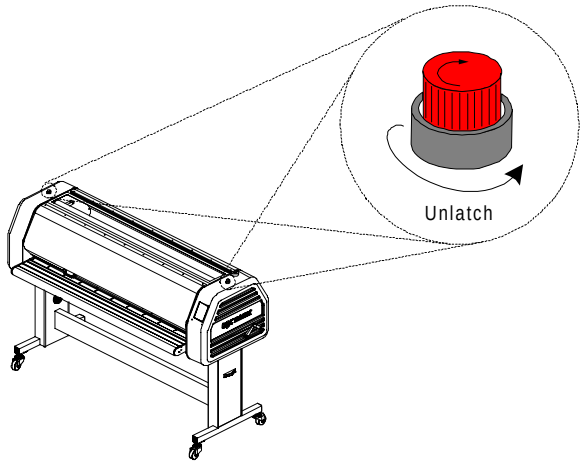
INFORMATION

When an EMERGENCY STOP is engaged, all motion stops. The nip will not change from the operating setting.

b) Resolve the emergency situation.

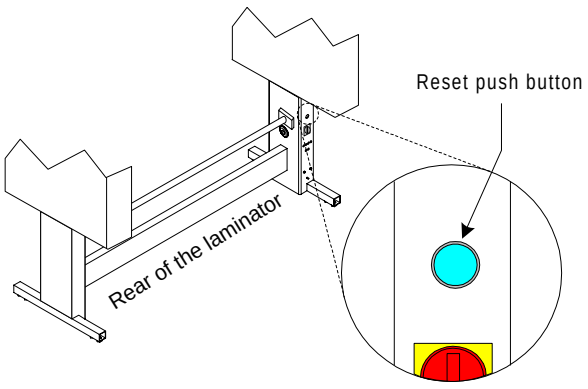
c) Reset the **E-STOP** by rotating 1/4 turn counter clockwise. The **E-STOP** will unlatch. Refer to **Figure 5.2.1**

Figure 5.2.1 Emergency stop button



d) Press **RESET** at the rear of the machine on the drive side Please refer to **Figure 5.2.2**

Figure 5.2.2 RESET



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INFORMATION

Once RESET has been engaged, power will be restored, Laminating rollers will reset to 1 in. GAP and the display will return to it's default settings.

Default mode; TOP TEMP. = 68 ºF (20 ºC), BOT. TEMP. = 68 oF (20 oC), GAP = 1 in., PRESSURE = no bars are solid, JOB = 0, no motion direction selected, SPEED = 00.0 and SLEEP = flashing

e) Enter the desired operating parameters or select the job number prior to the emergency stop situation.

f) You may now resume operating the laminator.

Section 5.3 Set up

Initial set up of the Falcon 160 laminator is easily attained when instructions are followed exactly. It is suggested and helpful if you take the time to read this section thoroughly before attempting to do any of the steps.A complete understanding of this section will enable you to follow the procedures descibed in **Section 6.1 Application**.

5.3.1 Power

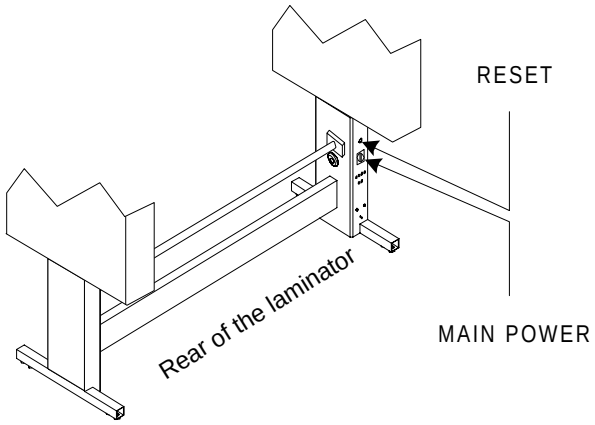
a) Clear the area around the laminating rollers and pull rollers nip..

b) Make sure the laminator is plugged in.

c) Turn the **MAIN POWER** to the "**ON**" position. Refer to **Figure 5.3.1**

d) Press **RESET**. The front control panel will illuminated. Refer to **Figure 5.3.1**

Figure 5.3.1 MAIN POWER / RESET



5.3.2 Film loading

a) Raise the rear safety shield if placing a roll of laminate onto the upper unwind shaft.

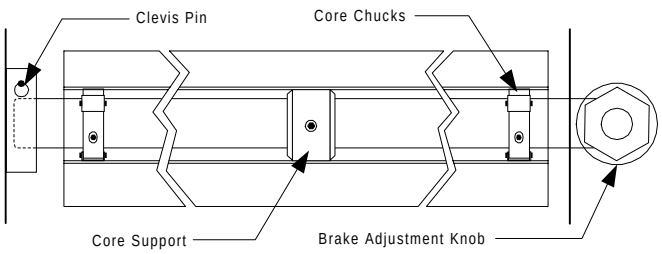
b) Lift the clevis pin located in the saddle of the upper unwind shaft.

c) Swing the unwind shaft out enough to slide the roll of laminate over the core chucks and onto the unwind shaft. Refer to **Figure 5.3.2**

INFORMATION

When sliding a roll of laminate onto the unwind shaft, it helps if you twist the roll while sliding.

Figure 5.3.2 Unwind shaft



d) Once the roll of laminate is on the unwind shaft, swing the unwind shaft back into the saddle.

CAUTION

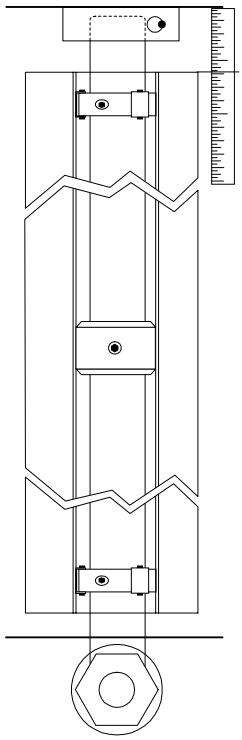
Make sure the roll of laminate is properly on the unwind shaft. The adhesive, when exposed should be facing away from the rollers. This will prevent hours of roll cleaning.

e) Push the clevis pin back down to secure the unwind shaft its saddle.

f) Now you must center the roll of laminate on the unwind shaft. Refer to **Figure 5.3.3** for measurements. For centering measurements, refer to **Figure 5.5.4**.

g) For the lower unwind shaft, repeat steps "b" through "f" again.

Figure 5.3.3 Centering the roll



Make sure the laminate is flush with the core.

Measure from the side frame to the edge of the roll of laminate.

h) Close the rear safety shield when finished.

Figure 5.3.4 Measurement chart

Most common film widths	
Film width	**Measurement**
12 "	28 "
24 "	22 "
31 "	18.5 "
37 "	15.5 "
38 "	15 "
41 "	13.5 "
47 "	10.5 "
49 "	9.5 "
51 "	8.5 "
55 "	6.5 "
58 "	5 "
60 "	4 "
62 "	3 "

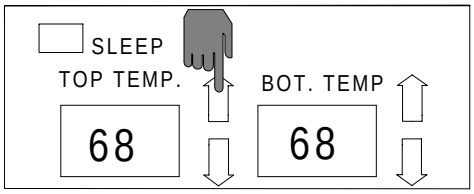
INFORMATION

For the lower unwind shaft, add 1/4 in. to the measurement.

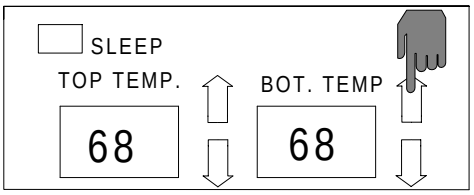
5.3.5 Heating

Perform the following steps.if the application requires heat. Allow the rolls to heat up while rotating for even heat disbursement.

a) Press **TOP TEMP. ▲** to set your upper roller temperature.



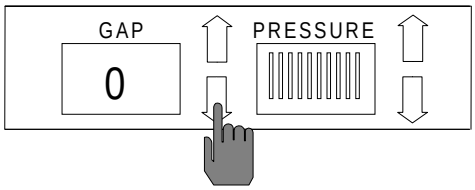
b) If required, press **BOT. TEMP.** ▲ to set your lower roller temperature.



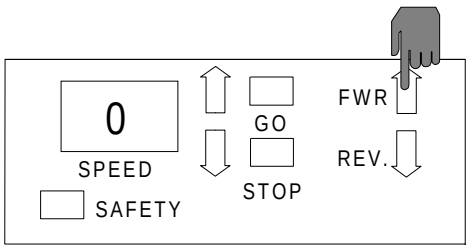
INFORMATION

When requiring top and bottom heat, it is recommended to set both temperatures to the same set point.

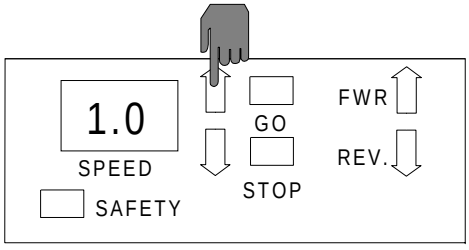
c) Press **GAP** ▼ to set the gap to "**0**".



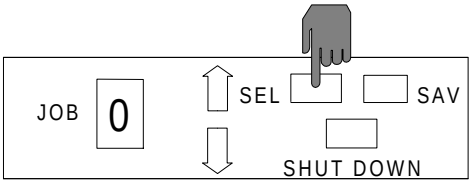
d) Press **FWD** ▲ to set a forward motion direction.



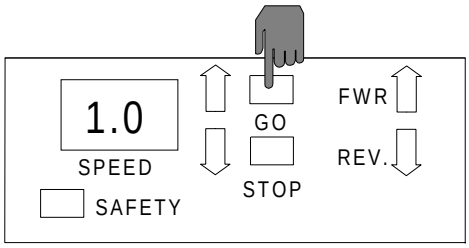
e) Press **SPEED** ▲ to set a speed of 1 ft/min.



f) Press **SEL** to engage the parameters.



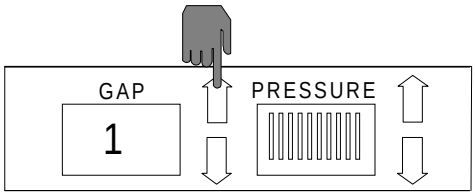
g) Press **GO** to engage the motor drive system.



INFORMATION

By decreasing the pressure to "0" when heating the laminating rollers, you allow the high release silicone to expand with minimum restrictions.

h) When the rollers are close to it's set point value, the temperature displays stop flashing, press**STOP** and raise the gap to 1 in. by pressing **GAP** ▲



Section 5.4 Job programming

The job save feature is very convenient if the same parameters are required to perform various applications. This procedure will guide you step by step through this feature.

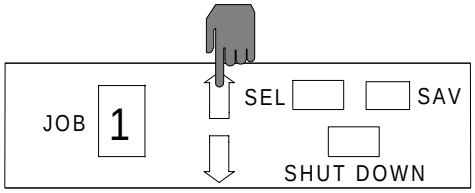
a) Follow the prcedure in **Section 5.3.1 Power**.

INFORMATION

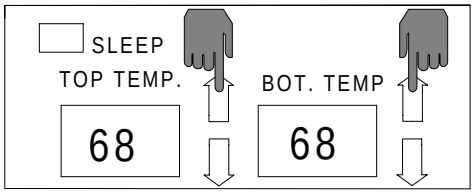
When the laminator is first turned on, the front control panel will go into the default mode.

Default mode; TOP TEMP. = 68 °F (20 °C), BOT. TEMP. = 68 oF (20 oC), GAP = 1 in., PRESSURE = no bars are solid, JOB = 0, no motion direction selected, SPEED = 00.0 and SLEEP = flashing

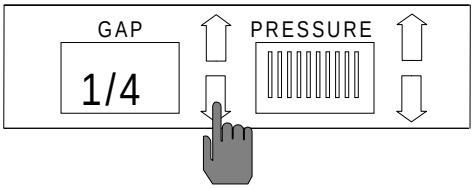
b) Press **JOB ▲** to enter the desired job number for the parameters you require to be stored.



c) If heat is required, press **TOP TEMP. ▲** and **BOT. TEMP. ▲** to desired settings. If no heat is required, leave the settings at 68 °F (20 °C).



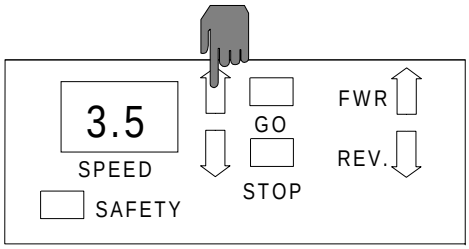
d) Enter in the **GAP** setting desired by pressing **GAP ▼**.



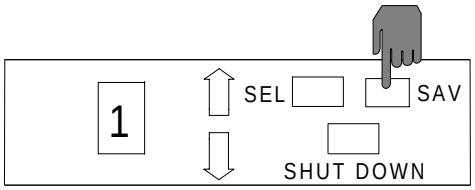
INFORMATION

When storing parameters within the JOB SAVE feature of the laminator, PRESSURE is not a storable setting.

e) Enter a desired speed by pressing **SPEED ▲**.



f) Press **SAVE** to store the parameters in the job location selected.



h) Repeat steps "**b**" through "**f**" to save other parameters in job location numbers.

CAUTION

If you accidentally press SAVE at any time, the old parameters will be replaced with the new parameters.

INFORMATION

You should store each job location with its parameters on the chart provided in Figure 5.4.1

Figure 5.4.1 Job save chart

JOB #	TOP TEMP.	BOT. TEMP.	GAP	SPEED
1				
2				
3				
4				
5				
6				
7				
8				
9				

Section 5.5 Manual nip adjustment

If the substrate does not fall with in the preset **GAP** settings available, a manual nip setting must be performed.

If you are unsure of a substrate thickness, it is recommended that you use the manual nip setting procedure.

If you are performing a mounting application from the rear of the machine, the pull rollers must be set manually. Refer to **Section 5.5.2 Pull roller nip adjustment procedure**.

5.5.1 Main roller manual nip adjustment

a) Raise the front safety shield. **SAFETY** begins flashing.on the control panel.

CAUTION

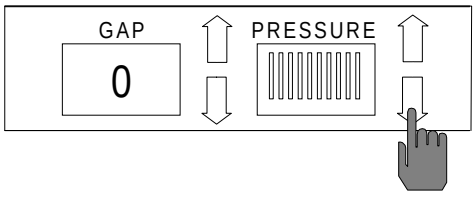
Caution should always be exercised when using the laminator with the safety shields raised. You can be seriously hurt or injured.

b) Position the leader board in the center of the rollers between the nip.

CAUTION

If the substrate being used has sharp edges, the edges should be filed smooth and the gap should be manually adjusted. If not, you can cause irreparable damage to the rollers.

c) At eye level with the main rollers, press **PRESSURE ▼** until you see the top roller makes contact with the substrate.



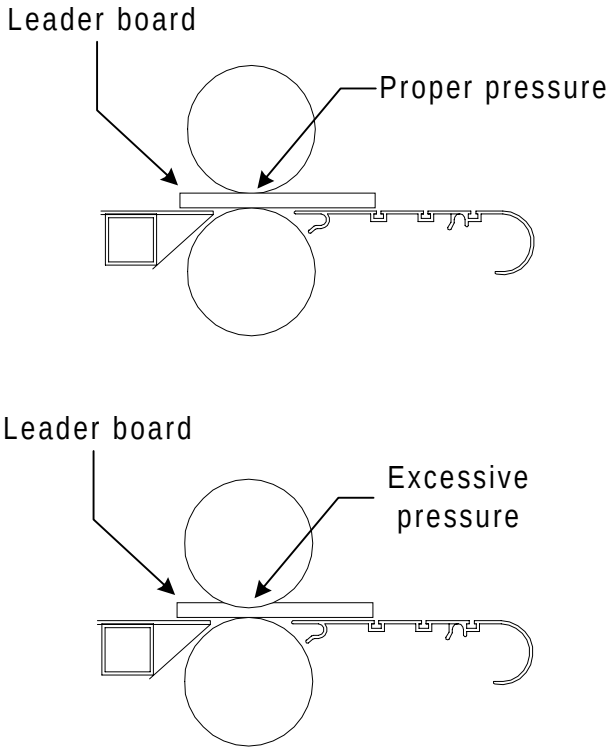
INFORMATION

Excessive pressure on the substrate will cause it to curl.

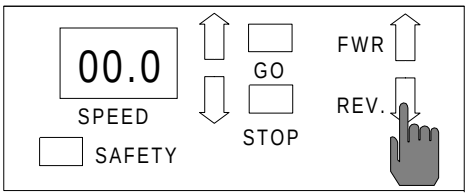
INFORMATION

Refer to Figure 5.5.1 for proper roller pressure.

Figure 5.5.1 Roller pressure



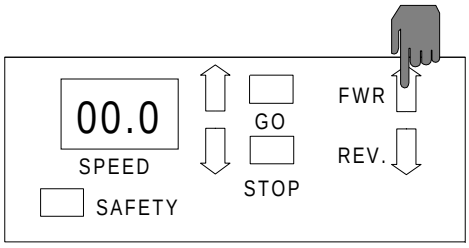
d) Press **REV ▼** for a reverse motor direction.



e) Step on the variable speed footswitch to back the leader board out.

f) The main roller nip has now been manually set.

g) On the control panel press **FWD ▲** for a forward motor direction.



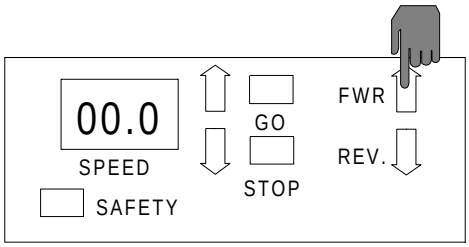
h) You may now begin mounting from the front operating position.

5.5.2 Pull roller manual nip adjustment

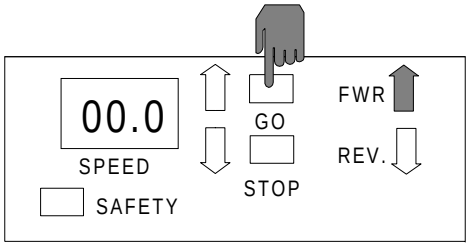
INFORMATION

If the main laminating rollers are heated, mounting application may be run from the rear operating position of the machine.

a) Press **FWD ▲** for a forward motor direction.



b) Press **GO**. **GO** begins flashing indicating "Footswitch" mode.



c) Bring the footswitch around to the rear of the laminator.

d) Raise the rear safety shield.**SAFETY** will start flashing on the control panel.

CAUTION

Caution should always be exercised when using the laminator with the safety shields raised. You can be seriously hurt or injured.

e) Position the leader board in the center of the rollers between the nip.

CAUTION

If the substrate being used has sharp edges, the edges should be filed smooth and the gap should be manually adjusted. If not, you can cause irreparable damage to the rollers.

f) At eye level with the pull rollers , turn the pull roller crank handle clockwise until you see the top roller make contact with the substrate.

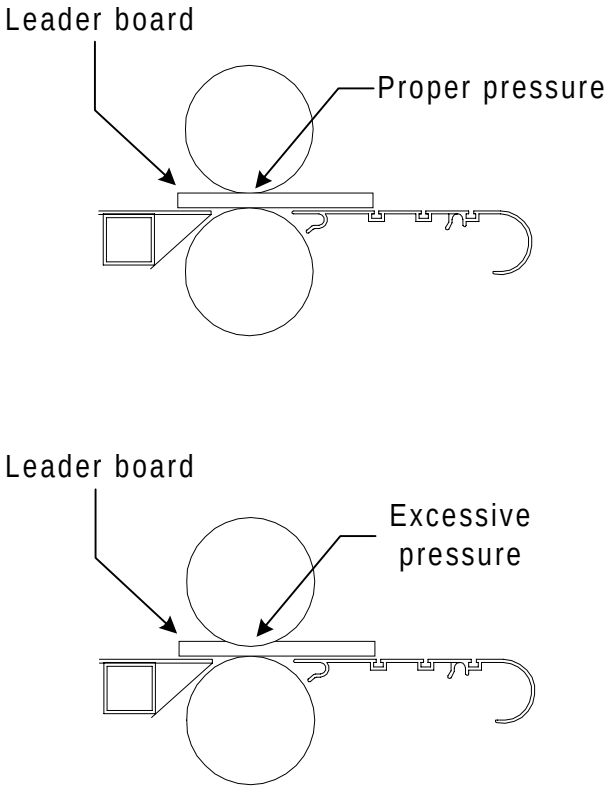
INFORMATION

Excessive pressure on the substrate will cause it to curl.

INFORMATION

Refer to Figure 5.5.2 for proper roller pressure.

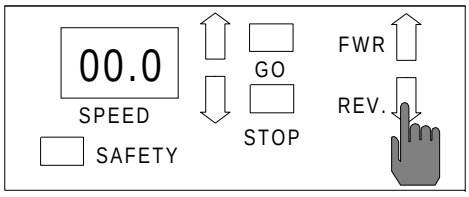
Figure 5.5.2 Pull roll pressure



g) Step on the variable speed footswitch to back the leader board out.

h) The pull roller nip has now been manually set.

i) On the control panel press **REV ▼** for a reverse motor direction.



k) You may now begin mounting from the rear operating position.

Section 5.6 Infeed tables

These tables are part of the Falcon 160 safety features. It is neccessary to have the two infeed tables properly positioned before running the laminator.

CAUTION

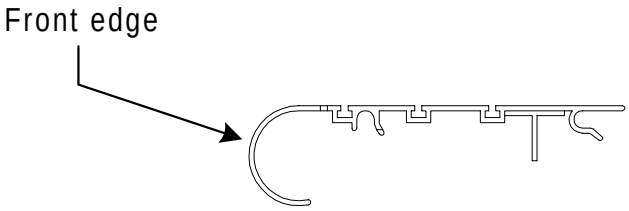
If not installed properly, you can be injured or cause damage to the table or laminator.

5.6.1 Removing the table

a) Raise the safety shield.

b) With both hands, grip the front edge of the infeed table and lift up and then out. Refer to **Figure 5.6.1**

Figure 5.6.1 Front edge

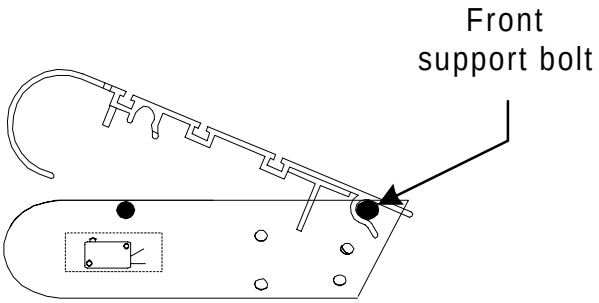


5.6.2 Replacing the infeed table

a) Ensure that the safety shiled is in the raised position.

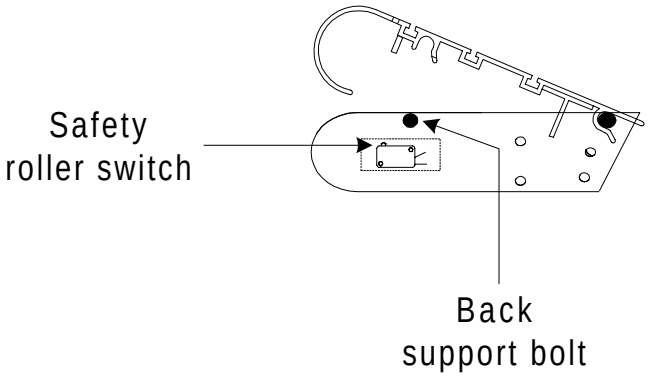
b) With both hands, grip the front edge of the infeed table and align the back edge with the support bolts. Refer to **Figure 5.6.2**

Figure 5.6.2 Back edge



c) Now lower the front edge while ensuring that the pin aligns with the safety roller switch and the back support bolt. Refer to **Figure 5.6.3**

Figure 5.6.3 Safety roller switch



CAUTION

If the safety roller switches are not engaged, the laminator will not operate in "Panel" mode.

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